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[The Association as a body is not responsible for statements or opinions of any of its members.]

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THE TRAINED NURSE AS A SPECIAL DOMESTIC SANITARY SUPERVISOR.

So much has been written regarding the vast variety of functions which a trained nurse should exercise that no originality can be claimed for a suggestion to specialize one of these for a single purpose, but an outline of one such usage for public health purposes may be found useful.

In outbreaks of transmissible diseases, the nurse who is in attendance on the sick must guard and supervise the well also as a mere incident to the clinical nursing. But under certain circumstances, the sanitary supervising of the well becomes the primary requisite, sometimes without much, if any, demand for the nursing of the sick. These conditions may arise in small communities, where contact infection is obviously a leading or the only factor, and where at the same time the existing cases are for the moment chiefly convalescents or already sufficiently well nursed from a clinical standpoint, by

relatives or others, not especially trained. It often happens under such circumstances that a nurse may be engaged with advantage solely to circulate amongst the families where the affection exists or has existed, solely to observe, and insist on sanitary precautions for the protection of those not yet infected. Few trained board of health officials can afford the time, fewer still are able to associate sufficiently closely and continuously with the families concerned, to secure their patient minute detailed attention to every possible channel of infection. A trained nurse, charged with this duty alone, acting under authority from, and reporting to, the health authorities, can accomplish infinitely more than any number of printed or spoken directions, particularly if her visits are made daily for some time, and include inspections of the routine of the family life under the prescribed regime.

A case in recent public health practice may be quoted to illustrate the general principle, names, etc., being suppressed for obvious reasons. In a thriving country town of 2500, possessing two really good hotels, the matron of one hotel, having from twenty-five to one hundred guests daily, contracted typhoid fever. She was nursed by her husband, the chief clerk in the hotel, with some attendance from the dining-room girls. Three regular boarders came down, two of whom were nursed for a time at least in the hotel, their laundry being washed by the hotel laundresses and more or less of the necessary attendance furnished by the hotel "help." Of the dining-room girls, laundresses and other help in more or less contact with infected material, six came down with the disease. Guests from uninfected neighborhoods, taking meals at the hotel, also succumbed. Amongst others, the head dining-room girl, on whose remarkable energy and efficiency the commissarriat department seemed to pivot, became ill with typhoid. As soon as she recovered she at once went back to work. So with the day clerk. The husband of the first case became chef. The upset caused by the outbreak and inevitable short-

handed condition of the hotel staff subjected the hotel milk supply from day to day to the handling of anyone free enough at the moment to attend to it, instead of to the regular milk-handler. Notwithstanding that no actual cases existed in the hotel at the time when first investigated by the State health authorities, the fact that so many of those having to do with the food and coming into direct or indirect contact with the guests had recently suffered from typhoid fever, while those not so far sick had been emptying discharges, etc., of those who had been sick, constituted the hotel a public danger, because of the likelihood of contact infection, direct and indirect. But the life of the town centered very largely at this hotel. Great loss and inconvenience to the public as well as to the proprietors would follow if it were closed, and the other hotel, recently open, would have an enormous competitive advantage. It was not practicable to close it. To remove from the hotel those who were probably infective would be nearly equivalent to closing the hotel, since it would remove from the hotel its principal administrators, while, for the same reason, such a proceeding could only result in the other conditions becoming even worse than those already existing. It is hopeless to expect that mere instructions, no matter how detailed or how often repeated, would be faithfully and intelligently carried out even with the best intentions on the part of all concerned. The suggestion made above, regarding the use of a trained nurse for sanitary supervision, was followed out, there being no question that elimination of infection of guests and other dangerous contact was possible under proper precautions, rigidly carried out, without the suspension of the infected employees or the closing of the hotel. Either of the latter procedures would at first sight appear to be more efficient than that adopted, but unfortunately neither of them could well include any time limit, for it would be hard to say when the hotel might with safety be reopened or the suspension of the employees terminated. On the other hand the

services of the nurse might terminate at such time as observation should show that a routine of hand disinfection and other similar precautions had become recognized and established hotel habits, to be continued indefinitely, without supervision, until all danger had passed.

It is not impossible that a similar use of a trained nurse might be made in cases where infection amongst indispensable employees of other businesses involving close contact with the public obtain, although such is perhaps more likely to arise in hotels, institutions, schools, etc., than in other places, and with typhoid fever than with most other infections.

H. W. HILL.

THE AMERICAN PUBLIC HEALTH ASSOCIATION.

The American Public Health Association holds its next annual meeting at Atlantic City, N. J., Sept. 30 to Oct. 4.

Circulars calling attention to the work of the Association, to the Laboratory Section and to the new Section of Vital Statistics, have recently been received. Believing that among our readers there are undoubtedly quite a number actively engaged in public health work who do not belong to the A. P. H. A., we would call their attention to these circulars, parts of which are printed below.

(Circular Letter from Program Committee.)

To Laboratory Men Working in Public Health Laboratories.

The American Public Health Association, the only international public health association on this continent open to all professional hygienists, has from the first represented both the executive and technical phases of public health work, Federal, State and municipal. Under its auspices a committee was appointed in 1894 to formulate standard methods for

water analysis and in due course of time, as a natural outgrowth of this beginning, a Laboratory Section was formed in 1899 with the design of accomplishing for all lines of public health laboratory work what the widely known and accepted Standard Methods Committee has done so well for water work. A committee of the Section is now engaged in formulating standard methods for the bacterial examination of milk, perhaps the most pressing of the newer public health laboratory problems.

The American Public Health Association as a whole represents the science, art and technique of public health executive work; the Laboratory Section represents the science, art and technique of the test tube and microscope, as applied to the solution of public health problems. It is our desire to have as a member of this Section every practicing public health laboratory man, in order that this section shall be representative of the public health laboratory, which is nowhere else represented in this country. Such laboratories have problems distinct from those of the teaching laboratory. They have done excellent work, both routine and research. Certain lines of research can be done only in such laboratories and there is no question that they have an individuality of their own which justifies them in desiring definite representation in a society of their own. Such a society for public health laboratory men the Laboratory Section offers, with an already large membership of well known men and the additional advantage of close affiliation and contemporaneous meetings with the public health executives, for whom and through whom laboratory results are useful and effective in advancing public hygiene, as well as in every day routine.

Every public health laboratory man is invited to join the American Public Health Association and to become thereafter, without additional fee, a member of the Laboratory Section. Boards of Health are urged to see that their laboratories are represented by delegates at the Association meet-

ings. To become a member of the Association, make application to the Secretary of the Association, Dr. C. O. Probst, Secretary Ohio State Board of Health, Columbus, Ohio; two signatures of members are required for endorsation, but these are unnecessary in the case of delegates appointed by Boards of Health.

(Signed) F. C. ROBINSON,
C. O. PROBST,
H. W. HILL,
Program Committee.

(Circular Letter from Committee on Organization of a Section of Vital Statistics.)

At the last meeting of the American Public Health Association, in accordance with the request of many registration officials, the following resolution was adopted:

Resolved, That a committee of five be appointed by the President of the American Public Health Association to report on the organization of a Section of Vital Statistics at the next meeting of the Association, and that it be authorized to notify registration officials in the countries represented in the Association, particularly inviting their attendance at the next meeting, and to prepare a Constitution for approval by the Association and adopted by the Section at that time.

The Committee on Organization appointed to carry out the purpose of this resolution met at Washington in May, and formulated a draft of a Constitution, the first two sections of which are as follows:

Purpose of the Organization.

1. The purpose of this organization is to bring about a closer official and personal association of the registration officials of the several countries composing the American Public Health Association; to promote the introduction of effective

systems of registering vital statistics; to aid the adoption of uniform methods of collecting, preserving, correcting, and compiling registration records and of publishing the statistical data derived therefrom in the most useful form, especially for sanitary purposes; to conduct the active co-operation of the American Public Health Association with the Government agencies of each country and with other organizations interested in the improvement and use of vital statistics; to report on the actual condition of the International Classification of causes of death as employed in vital statistics, reports and bulletins, and to formulate recommendations for its deceinnial revision; to help in the better reporting and classification of the mortality of occupations; to present and discuss papers relating to vital statistics both in the Section meetings and in the general sessions of the American Public Health Association; and in general to promote a proper appreciation of the necessity and importance of vital statistics as an absolutely essential basis of modern public health work, and to improve the character and status of registration service.

Membership.

2. Registration officials and other workers in vital statistics who are members of the American Public Health Association shall be eligible to membership in the Vital Statistics Section.

The above extract, which is subject to approval by the Association and Section, shows the general scope of the movement as understood by the Commttee on Organization. Your attendance is earnestly requested at the *first meeting* of the Section, which will be held in connection with the Thirty-fifth Annual Meeting of the American Public Health Association at Atlantic City, New Jersey, beginning on September 30 and ending October 4, 1907. A circular will be sent by the Secretary of the Association giving full information in regard to reduced railway fares, accommodations, etc. It is expected

that the first Section Meeting will be held on Monday, September 30, when the preliminary organization will be effected.

In addition to organizing, it is planned to begin the active work of the Section at this meeting, and papers, questions, and suggestions on various phases of vital statistics, and especially relating to the practical side of registration work and the sanitary uses of mortality statistics, are requested. They may be sent to Dr. Cressy L. Wilbur, Bureau of the Census, Washington, D. C., who will provisionally act as Secretary of the Committee.

There is a large field of usefulness for this Section, and it should have the enthusiastic support of all registration officials and users of vital statistics. If you cannot be personally present at this first meeting, or send a paper or suggestions, please let us know that you are interested in the movement and will, at least, be with us in spirit. Sincerely,

(Signed)

J. N. HURTY, Chairman,
CRESSY L. WILBUR,
JOHN S. FULTON,
JESUS E. MONJARAS,
CHARLES A. HODGETTS,
Committee.

DIPHTHERIA, SEWER GAS AND INFECTION.

In the February number of this Journal, a circular or pamphlet on "Diphtheria: Its Prevention, Restriction and Suppression," issued by the Illinois State Board of Health, was reviewed by the writer of this article.

In the May-June number of the Bulletin of the Illinois State Board of Health we find the following:

"Dr. Samuel H. Durgin, the distinguished editor of The American Journal of Public Hygiene, and Journal of the Massachusetts Association of Boards of Health make the follow-

ing comment on the circulars of diphtheria, scarlet fever and typhoid fever, recently issued by the Illinois State Board of Health:

'The State Board of Health of Illinois has recently issued pamphlets bearing the above title. Similar pamphlets have also appeared on scarlet fever and typhoid fever. This literature is written in clear, concise language and is sufficiently free from technicalities as to render it easily understood by the laity for whom it is evidently intended.

The education of the people along such lines as these is a step in the right direction and the advice given is, on the whole, excellent. Particularly good is the admonition to call the physician without delay in all doubtful cases and the statements regarding the benefits of the early use of antitoxin.'

Continuing, the reviewer offers the following criticism which, in view of existing opinions of those presumed to be most conversant with matters of public health, is read with a certain degree of surprise:

'It is somewhat to be regretted that the author of these pamphlets has called particular attention to sewer gas as a cause *per se* of infection, since experiments within recent years by competent workers have shown the air from sewers to be practically free from bacteria of any kind. Were it in fact true that disagreeable odors were carriers of infection, the people themselves would take more interest to learn how best to avoid infection.'

'It is also our opinion that too much attention has been called to filth and its effect in lowering vital forces so that the body becomes more susceptible to disease. While this is true in a degree and while it is desirable to get rid of filth for good reasons, we believe it positively harmful to so emphasize these points as to distract attention from what is the more usual channel of infection—direct contact.'

It is doubtless true that the public should be advised that the chief means of spread of diphtheria is by direct contact, but at the same time the "experiments made within recent years by competent workers" have not sufficiently convinced us that other factors of propogation are to be entirely ignored. It is entirely proper to lay our heaviest defenses in the way of the major danger, but our efforts will not be productive of the best results if we ignore the minor forces of the enemy.

The relationship between decomposing animal and vegetable matter and filthy and unprotected sewers and drains with outbreaks of diphtheria, is unqualifiedly admitted by Welch and Schamberg, who say that "it cannot be denied that the emanations from such a source act as a predisposing cause to precipitate an attack when the diphtherial entity is present." Northrup, in Nothnagel's Encyclopedia of Practical Medicine, names defective drainage, decomposing substances and sewer gas as exciting causes of diphtheria when the Klebs-Loeffler bacillus is present. Harrington recognizes the association between diphtheria and unsanitary conditions, faulty drainage and defective sewage, although he holds that these factors predispose to diphtherical infection through their depressing effect upon the vital functions and the general health. Rohe holds that foul air is productive of general deficiency of nutrition with diminution of resistance to disease, and calls attention to the unquestionable outbreaks of infectous maladies on account of the escape of sewer-air into inhabited rooms—although he, like all others, admits that the specific organism of infection must be present.

When we consider that the Klebs-Loeffler bacillus is frequently present in the throats of healthy individuals who resist their invasion through active vitality, we are brought face to face with the proposition that, in case the bacillus is present, the determining factor as to whether diphtheria will or will not occur is the presence or absence of those conditions recognized as lowering the resistence to bacterial invasion. Inci-

dentally, it has not been the contention of the Illinois State Board of Health that sewer gas or filth do more than to "favor the spread of disease" and we believe that this contention has never been successfully disputed.

But turning to the "experiments made in recent years by competent workers," we find evidence which would warrant even a more positive stand on the subject of the dangers of sewer-gas, than has been taken in the publications of the State Board of Health. In the Journal of the American Medical Association for June 22, 1907, the experimental work of Horrocks is dwelt upon editorially and the conclusion is reached that there is danger of the actual spread of specific infectious disease through defective sewers. The editorial is well worth quotation in full:

> *THE POSSIBILITY OF INFECTION FROM SEWER PIPES*: It was a common theory twenty years ago that infectious diseases were spread by sewer gas, and outbreaks of diphtheria and other infectious diseases were attributed to improper drainage and the escape of noxious gases into the sleeping apartments of those attacked by the diseases. With the demonstration of the germ theory of the infectious diseases the idea of the action of sewer gas in their production was gradually abandoned, as well as the theory of the causative influence of emanations from the soil. The theory of the causation of infectious diseases by fomites, however, persists. Recently Horrocks (Proceedings of the Royal Society, lxxix, B 531) has instituted some interesting experiments to determine whether the air of drains and sewers may be infective. In a first series of experiments he worked with sewage in a closed vessel, and found that the bursting of bubbles of gas, in the absence of currents of air passing through the apparatus, was not sufficient to infect the air of the container. He used *Bacillus prodigiosus, Bacillus typhosus* and *Bacillus coli communis* in his experiments.

When, however, he used an apparatus in which there was a circulation of air, he found that the bursting of gas bubbles was sufficient to infect the air of the system. If the sewage was infected with a known organism, Petri dishes, suspended at various levels above the surface of the fluid in the system, became infected in a varying length of time after they were placed in position. Further experiments showed that the separation of dried particles from the walls of the pipes of a sewage system and the probable ejection of minute particles from flowing sewage might infect the air of the system. In order to prevent the passage of microorganisms into the house drainage system from a main sewer, thus infecting the air of the house, a disconnecting trap is necessary. In an interesting series of experiments made with actual sewage systems of a house and a military hospital it was shown that the organisms might be carried from the sewage to the air inlet of the system. Indeed, the air inlet was shown to be a source of danger of infection even when the inlet was protected by a mica valve, particularly when the inlet was placed at about the ground level. These experiments seem to show that there is danger of actual spread of infectious material by badly constructed sewerage systems, apart from the recognized danger of depression of the resistance of the individual by inhalation of the noxious gases liberated.

It would seem that this is one of the cases in which the pendulum of professional and scientific opinion had swung too far. The doubt occasioned by the advanced idea of bacteriology caused many to deny the importance of the other factors in the spread of disease, without considering that the specific microorganisms might be the active agents in those agencies formerly to be potent in the spread of disease."—*From the Illinois State Board of Health Bulletin for May-June.*

While it is not our purpose to enter into any extended discussion with those whose opinions may not agree fully with ours it seems well in this case to quote certain passages from the pamphlet in question and then let our readers judge for themselves whether or not we were justified in our criticisms. (Italics in every case ours.)

Quotations from Illinois State Board of Health Circular on

Diphtheria:

"Filth plays a very important part in the spread of diphtheria, for unsanitary conditions tend to lower vitality, and in consequence to increase the susceptibility to the disease. *There is no doubt, also, that sewer gas is a carrier of diphtheretic poison and that many outbreaks hence hold close relationship with defective drainage, sewers and cesspools.*" (Page 1, Diphtheria, its Prevention, etc.)

"Whenever diphtheria exists in malignant form *there will generally be found some obvious cause, such as accumulation of filth, unclean cellars, foul gutters or cesspools or overflowing privy vaults.*" (Page 2 of pamphlet.)

The language in which the above quotations are couched would unquestionably make even the most intelligent member of the laity believe that the writer of the pamphlet meant to infer that sewer gas, filth, etc., are causes *per se* of infection, an interpretation that the editor of the Bulletin now distinctly states (Vol. 3, No. 5, page 204) that he does not wish taken.

With the possible exception of the last reference (Horrocks) we have not questioned the statements made relative to filth as a predisposing agent and fail to see wherein our review disputes in any way the opinions of these gentlemen. It is well known that the workers in the great sewers of Paris and London are healthy men. Horrocks' article which appeared on this continent first in Nature sometime subsequent to the publication of the review in question, might appear to cast a

different light on the subject of the possible transmission of typhoid by means of sewer gas. We prefer to wait for results by other experimenters along this line before changing an opinion on a single set of results which so radically differ from much that has been published. We would also refer to the opinions of Dr. Chapin on this point.*

Admitting for the sake of argument that there is a slight possibility for the transmission of sewage organisms by sewer air we must still call upon our critic for any evidence tending to show the presence of diphtheria bacilli or "diphtheretic poison" in sewage. As for filth, there is available evidence† to show that diphtheria bacilli tend to die out rapidly outside the human body.

In conclusion we still believe that the language employed in the pamphlet was such as to perpetuate the common idea of the transmission of diphtheria in particular and other diseases in general through sewer gas and fomites, that an otherwise excellent article was rendered of doubtful value, and that it is "positively harmful to so emphasize these points as to distract attention from what is the more usual channel of infection—direct contact." ‡

B. R. RICKARDS.

MASSACHUSETTS ASSOCIATION OF BOARDS OF HEALTH.

The quarterly meeting of the Association was held, by the courtesy of the Boston Board of Health, at Gallup's Island, Boston Harbor, on Thursday, July 25, 1907. Members were conveyed to and from the Island by the steamer "Vigilant." Before landing there they visited the Boston Floating Hospital, which was moored at the wharf.

Dinner was served at 1.15 P. M. It was followed by a

*This Issue, Page 296.
†Annual Report.
†Boston Board of Health, 1902, page 70.
†Boston Board of Health, 1905, page 77.
‡This Journal, Feb. 7, 1907, page 130.

business meeting held under the presidency of Dr. Henry P. Walcott.

The records of the April meeting, which was held at the Hotel Brunswick, Boston, were read and approved.

The following members were elected, upon recommendation of the Executive Committee:

J. Porter Russell, of the Cambridge Board of Health.

Dr. George C. Anthony, Chairman of the Wellesley Board of Health.

Dr. Sylvester F. McKeen, of Allston.

Dr. George F. Hart, of the Webster Board of Health.

Dr. O. A. Bemis, of the Whitman Board of Health.

George A. Edison, of the Whitman Board of Health.

Lucius Cook, of the Whitman Board of Health.

David Craig, of Boston.

Alfred M. Russell, of the Newton Board of Health.

Dr. James Knight Wardwell, of the Norfolk District Milk Commission.

Dr. David C. Dow, of the Cambridge Board of Health.

RECENT PUBLIC HEALTH LEGISLATION.

By Dr. Henry P. Walcott, President Mass. State Board of Health.

The first business of the afternoon appears to be an address by Henry P. Walcott, President of the State Board of Health, on Recent Public Health Legislation. What I have got to say does not deserve to be dignified by the title which has been given to it. There is one topic that I wish to speak upon, and but one. The far greater subject, that of the very important work in legislation effected by this last Legislature, will be far better spoken of by the man who is more responsible for it than anybody else, Dr. Wheatley, and I hope the Association understands how valuable the service rendered by Dr.

Wheatley has been in the Legislature. (Applause.)

The measure which I am going to speak about is Chapter 537 of the Acts of 1907. It is an act to provide for the establishment of health districts and the appointment of inspectors of health. It is really only a portion, an important portion, I think, of our public health service, and is practically the stone which completes the arch of our public health system in the Commonwealth, but it is after all only a portion of the public health service. It is an attempt to bring the powers of the State into the service of the municipalities of the Commonwealth, to bring it nearer to the people of the Commonwealth.

Boards of health have always existed in some form or another. We are inclined to think in Massachusetts that the practical idea of a board of health had its origin in the year 1869. That is not at all true. There was certain legislation in 1869 which brought the State Board of Health, the first State Board of Health in the country, into existence, but there had been all sorts of boards of health before that. In fact, in one form or another there had been boards of health ever since the medical profession has existed. The early Greek physician, Hippocrates, himself was a professor more of preventive medicine than of curative medicine. He was consulted by the public authorities, and his advice was acted on by the public authorities. Various of the European governments, of course, created certain forms of public health authorities centuries ago, but a real public health authority owes its origin, it seems to me, to two distinctly modern movements: (1) to the increasing benevolence of the world, the increasing desire to do something for your neighbor, the desire which has a magnificent monument in that steamer which we saw on our way down here, a kind of benevolence which did not occur to the people of two generations ago, and yet a most effective form; (2) to the growth of scientific knowledge as to what medicine can actually do.

When all that a physician could do was to relieve the discomforts of an individual, knowing very little about the thing

that afflicted that individual, it was perfectly evident that the State could accomplish very little, and there is no better illustration of what that really means than the one disease, yellow fever. Historically we know that Boston was twice emptied of its inhabitants by yellow fever, the last time in the year 1813. It was an unknown terror. People knew nothing about it, except that a certain dreadful thing had appeared in their midst, which killed people. The physicians could not cure it, and there was absolutely no means of dealing with it. They fled from it, and they fled from it down to our own immediate close recollections. We remember the condition of things in Memphis in 1879, an absolutely terror stricken community during the epidemic and after the epidemic. When the last epidemic of yellow fever occurred in Mississippi the State government and the whole social order nearly disappeared, and there was scarcely a semblance of State government left. A scientific discovery has shown that that disease, perhaps, is vastly more easily controlled than typhoid fever. There is absolutely no reason why any community should be terror stricken by it. There is every reason why the community should place in the hands of somebody almost absolute power for, in the first place, taking the man who has yellow fever and so secluding him that the mischief-making insect cannot come into contact with him, and so protecting well people that the insect that is infected itself cannot come in contact with them. It is the simplest possible problem, and it justifies any amount of legal interference on behalf of the community as a whole. That thing has gone on, and it will go on indefinitely. So that the community is now justified by ample scientific knowledge in erecting all sorts of barriers, and it does not need a man of my age to predict, certainly the youngest man here can predict it as surely as I can, that the number of diseases so treated is going to increase enormously in the future, and the powers of the Commonwealth are going to be invoked to a much larger extent than they ever have been invoked.

In 1850 a very remarkable report was presented in the Massachusetts Legislature, the best public health document ever written in Massachusetts, one of the great documents of the world. That was a report written by Lemuel Shattuck and presented to the Legislature of 1850. Lemuel Shattuck was not a physician; he was an extremely intelligent layman. He made a sanitary survey of the State of Massachusetts, and he recommended not only a State Board of Health, he recommended far more efficient local boards of health than we had ever had. He also recommended some intermediary between that State Board and the local boards. He was too early for his time, and the people of Massachusetts waited nineteen years—or more exactly, eighteen years—until they created a State Board of Health. They did not meddle with the organization of the local boards of health, and it would probably be difficult even now to effect any very great changes in the organization of the local boards of health, some of which are very good, and some of which only exist in name.

Having got to his point of a central body possessed of a good deal of information, of local authorities in some cases possessed of no satisfactory information, how are you going to make the resources of the State available? That was the question that came years ago before the State Board of Health, and they eighteen years ago attempted to get some legislation which would give them a body of health inspectors, men who should stand between the authorities of the State House and the municipalities of Massachusetts. It excited certain jealousies, naturally, local jealousies, and the legislation was not at that time effected. It has had greater or less success; sometimes it has passed a Legislature, sometimes it has passed a Senate, but it never became a law until this year. Fortunately this year there were several influences that affected the legislative mind. One of them was a very strong organization of those who were interested in the measures for the prevention of the spread of tuberculosis. Another was a very earnest body of workers in the community who wished

to see a better care exercised over minors working in manufacturing establishments, and a better inspection of the conditions under which men labored. The result of all that was the legislation to which I have referred, Chapter 537 of the Acts of 1907, which reads as follows:

Section 1. The State Board of Health shall, as soon as may be after the passage of this act, divide the Commonwealth into not more than fifteen districts, to be known as health districts, in such manner as it may deem necessary or proper for carrying out the purposes of this act.

Section 2 provides for the appointment of the inspectors. These inspectors, it should be said, are appointed by the Governor; the Board of Health has nothing to say about the appointments.

Section 3. Every State inspector of health shall inform himself respecting the sanitary condition of his district and concerning all influences dangerous to the public health or threatening to affect the same; he shall gather all information possible concerning the prevalence of tuberculosis and other diseases dangerous to the public health within his district; shall disseminate knowledge as to the best methods of preventing the spread of such diseases, and shall take such steps as, after consultation with the State Board of Health and the local State authorities, shall be deemed advisable for their eradiction; he shall inform himself concerning the health of all minors employed in factories within his district, and, whenever he may deem it advisable or necessary, he shall call the ill-health or physical unfitness of any minor to the attention of his or her parents or employers and of the State Board of Health.

The fourth section simply provides that the inspectors shall be under the general supervision of the State Board of Health and shall perform such duties, 'other than those hereby imposed upon them," as the State Board from time to time shall determine.

Then the sixth section transfers to the State inspectors of health, under the direction of the State Board of Health, and in place of the inspection department of the District Police, certain provisions of law now in existence with regard to the protection of the working classes.

The important thing, it seems to me, in general terms about that legislation is that it is advisory legislation. The factory legislation that has been transferred to these inspectors is, in many cases, an executive office. The inspector uses powers which formerly belonged to the inspectors of the State Police, but the more general functions of these inspectors are advisory functions, and it seems to me that in this case the Legislature has shown great wisdom. It is not the business of this inspector in the Worcester district, in the Hampden district, in the Essex district, or in the Berkshire district, to exercise any autocratic authority over the local authorities now in existence in charge of health maters. It is his business to assist them. It is his business to inform them, if necessary. It is his business to bring the authorities of neighboring communities into co-operation. It is his business to properly inform the authorities at the State House that there are things here which only the State authority can deal with. He is to be the next friend of the local health authorities, and exactly in that way he is going to accomplish all that it is impossible to designate by any words of a written statute. He has got to exhibit himself as an individual of knowledge, of tact, and of perseverance. It is not the work of a day, it is not the work of a month, it is hardly the work of a year; but I believe, after meeting the gentlemen whom the Governor has appointed to these very responsible positions, that the State is going to get an ample return for any moneys that it may have appropriated for the purpose; I believe that the public health in Massachusetts, as a result of this legislation, is going to be better protected, and I believe that we are going to know more about the conditions

under which our people live. I think we are going in consequence to be able to provide better conditions for them, because the power of the State Board of Health under this new act is, after all, only an advisory power. We have the power, fortunately, and it is an enormous power, of reporting to the Legislature of Massachusetts, of reporting to all the people of Massachusetts through the Legislature, and I don't believe there is a single community in Massachusetts, from Boston down to Gay Head, or some other small community, which does not respect the public opinion of Massachusetts. I believe it always has controlled the State, I believe it always will control the State, and I believe in the hands of the gentlemen appointed to the most honorable offices it is going to be well exercised. (Applause).

I have now great pleasure in introducing to the Association Dr. Wheatley, to whose good services we owe our health legislation. (Applause).

RECENT PUBLIC HEALTH LEGISLATION.

By Dr. Frank G. Wheatley, Senator from Plymouth County.

Mr. President: It is with a good deal of embarrassment that I rise to-day to talk to you a moment after the very flattering, and I am sure, too kind words of your Chairman. The fact of the matter is, gentlemen, that in Massachusetts the State Board of Health is the power behind the throne. I don't mean by that that that power is exercised in any autocratic or unjust way, but in the mind of your chief executive and in the minds of your legislators, and I believe in the mind of every thinking man in the Commonwealth, the State Board of Health of Massachusetts is considered authority on matters affecting the public health, and so when it becomes known that certain measures are looked upon with

favor by the State Board of Health a man has to have a good deal of termerity to get up in the House or Senate and openly oppose such measures. Our State Board of Health, gentlemen, is altogether too modest a body, in that it refrains very carefully from interfering with legislation. I have repeatedly been to the executive officers of your Board of Health and said to them that such things and such things were under discussion, and while they might intimate to me personally that perhaps it might be wise legislation, they were very careful that the Legislature as a whole did not get an idea that they were dictating legislation.

I feel as if your Chairman had outlined by far the most important act that passed the last Legislature. I have not attempted to prepare any formal address on this occasion, but gathered from the invitation I received that it was the wish of the President of the Association and of the Executive Committee that I present to them in a brief way the actual results of medical legislation during the last year, and that I shall attempt briefly to do.

The Great and General Court recently prorogued was fruitful in medical legislation. It is my purpose to give to you a resumé of recently enacted laws and also call your attention to proposed legislation which fell by the wayside. Before doing that, however, I want to urge upon every member of this Association the importance of keeping in constant touch with medical legislation. It is my honest conviction, based upon three years of experience upon the Committee on Public Health, that the medical profession of the State can absolutely control legislation of this kind. It is only necessary for us to act unitedly, sensibly, and energetically to secure this end.

If I may be allowed a personal word, I want to say that I have felt fully as much satisfaction in working to prevent the enactment of laws as in any part that I have played in constructive work.

The General Court is a crude machine from which to grind out health regulations. It is a matter of common observation that men whose judgment is excellent on most subjects are often misled on matters medical.

I had a very striking illustration of that the other day. I was talking with a lawyer of prominence, whose name you would recognize if I should mention it, who gave me an account of a European trip that he had recently taken, and who said that while travelling in Italy his daughter was taken sick with tonsilitis, I think, and he had the good fortune to call the most distinguished physician in Italy. He said that physician was a man who held a high position in one of the leading medical schools in Italy, and was a most charming man personally and was an authority on all medical subjects Curiously enough he found out that the man was an anti-vaccinationist, because he had made a personal investigation of the subject and knew what he was talking about. It also developed farther that the physician had a method of his own for the treatment of tuberculosis. This prominent lawyer of Massachusetts told me in all good faith that this man brought germicides in direct contact with the germs that caused tuberculosis, and destroyed them in the living tissue, and his cures were so complete and so rapid that many of his patients did not believe they had tuberculosis at all; but he knew they had it, because he had absolutely made the diagnosis himself. I cite that to illustrate how men who are leaders in certain lines of work are mislead on matters medical. This lawyer believed that he did have a man of extreme scientific learning, and a remarkable physician, to treat his daughter, as he undoubtedly did. (Laughter.)

If we could by general law delegate to competent boards of health all medical regulations and stop piling Pelion on Ossa in the shape of specific laws, I am sure the Commonwealth would be the gainer, but unfortunately health boards are not always competent, and under our form of government

every man with a "hobby" has the right to embody it in a petition and bill, and no matter how crude the proposition, it stands a fair chance of being enacted into law.

A position on the Public Health Committee is not exactly "a bed of roses" for a medical man. You are quite apt to be told by petitioners, members of the Legislature and even by members of your own committee that your efforts for or against certain bills are based on financial reasons, that you favor vaccination laws, medical inspection laws, etc., because it means more money for the doctor; but such criticism is the exception rather than the rule. The average legislator is not so bad a fellow after all, and if he errs in his vote, the error is usually one of the head rather than the heart.

The acts that have a special bearing on the public health passed this year are as follows, the chapter in each case being of the Acts of 1907:

Chapter 138 provides that a body shall not be cremated within forty-eight hours after death, excepting death from contagious diseases, and when the death occurs within the Commonwealth, it shall not be received by any corporation authorized to cremate until its officers have received the certificate required by law before burial and a certificate from the medical examiner. When death occurs without the Commonwealth, the reception and cremation of the body shall be governed by such regulations as shall be made by the State Board of Health.

Chapter 164 provides that every person, firm or corporation operating a factory or shop in which machinery is used for manufacturing purposes shall maintain, free of expense to employees, a medical or surgical chest approved by the local Board of Health.

That provision, approved by the local Boards of Health, was added after the bill left the Committee on Public Health,

and in the minds of some makes the law perhaps permissive rather than obligatory.

Chapter 180 prohibits the free distribution of samples of drugs containing poisons or any other injurious ingredients. That bill was introduced by Senator Hayes of Springfield, and to my mind was wise legislation.

Chapter 183 provides more appropriation for inspectors of foods and drugs.

Chapter 215 provides that certificates of exemption from vaccination shall state the cause of exemption. That was the outcome of an attempt to secure a bill to provide that certificates of exemption from vaccination should be supplied by the school physician. That brought out all the long-haired fraternity from Berkshire to Cape Cod, and we had quite a stormy session. It was felt that perhaps it was not wise to stir up vaccination matters too much, in view of the fact that apparently we were getting fairly good results from our present laws, so that simple provision, that the exemption certificate should state the cause of the exemption, was added to the present law.

Chapter 216 that cream offered for sale shall contain not less than 15 per cent. of milk fat. I don't know whether that is really a health regulation or a food regulation.

Chapter 243 requires that boards of health, corporations and persons having any knowledge of or reason for suspecting contagious diseases among domestic animals shall give notice to the Chief of the Cattle Bureau of the State Board of Health. That to my mind is pretty important legislation, if it is lived up to.

Chapter 259 provides that proprietary or patent medicines shall be so labelled as to show the quantity of alcohol, morphine, codeine, opium, heroin, chloroform, cannibis indica, chloral hydrate, acetanilid, or any derivative or preparation of such substance.

Chapter 267 provides that neither women nor minors under eighteen years of age shall be employed in textile establishments before six in the morning or after six in the evening. That came from the Labor Committee, and is the much advertised Overtime Bill. It was strongly urged by the labor organizations as a health measure.

Chapter 285 exempts from penalty the sale by wholesalers of fruit and vegetables when the partially decayed condition of such articles is made known at the time of sale. It was found that under the law a man who had a case of oranges, for instance, partially decayed, which he sold to a retailer with the statement that they were decayed, was breaking the law.

Chapter 386 provides that reasonable expense by the Board of Health of a city or town caring for persons inflicted with diseases dangerous to the public health shall be paid by such person or his parents, if able, otherwise by the city or town where he has a legal settlement, or if he has not a legal settlement, by the Commonwealth. Any person incurring public expense in consequence of small-pox, scarlet fever, diphtheria, tuberculosis, dog bite requiring the anti-rabic treatment, or other diseases dangerous to the public health, shall not be deemed a pauper by reason of such expenditures.

Chapter 410 prohibits expectoration on any public sidewalk or any place used exclusively or principally by pedestrians, or, except in receptacles provided for the purpose, on the floor of any city or town hall, court house, public library, museum, church, theatre, lecture or music hall, mill or factory, or hall of any tenement building occupied by five or more families, school building, ferry or steamboat, railroad car (except smoking car), street railway car, railroad or railway station, or waiting room, or sidewalk or platform connected therewith. A very comprehensive anti-expectoration law.

Chapter 445. Wage earners held in quarantine shall be

paid by the city or town three-quarters (3-4) of their regular wages, not to exceed $2.00 per day.

Chapter 467 provides that the State Board of Health may delegate local boards power to grant permits in regard to ponds and streams used for public water supply.

Chapter 474 provides for the construction of three (3) tuberculosis hospitals, trustees to be nine (9), one representing the State Board of Health, one representing the State Board of Charity and three from the Rutland Board. That Board has already been appointed by the Governor.

Chapter 480 provides for the notification of the presence of diseases declared by the State Board of Health to be dangerous to the public health, and has special reference to tuberculosis.

Chapter 499 provides that the requirements made by the chief or any inspector of the district police in regard to heating or plumbing, ventilating, or other matters are subject to appeal to the State Board of Health, whose decision shall be final. I cannot see from that act how the State Board of Police have any final authority as to any matter. I don't think that act was thoroughly understood by the State Board of Police when it went through. (Laughter).

Chapter 503 provides that egresses or means of escape from public buildings shall be provided with a sign visible thirty feet away, and also that factories and work shops shall be well lighted.

Chapter 537 establishes health inspection districts, and provides for the appointment of health inspectors, as has been described by the Chairman of the Board of Health.

Among the so-called "health measures" that failed to be enacted the following may be of interest:

1. To license chiropodists.
2. To license barbers.
3. Removal of old wall paper.

4. Adulteration of linseed oil.

5. Registration of osteopaths.

6. Regulating the practice of medicine, so as to more completely exclude Christian Science practice.

7. Licensing midwives.

8. To prevent the sale of opium or morphine without written prescription from a doctor.

9. Giving the State Board of Health co-ordinate power with the local board.

That in my judgment was a reasonable provision, but it stirred up so much feeling among the members of the General Court from a local standpoint that it was thought wise to abandon any attempt of that kind this year.

10. Vaccination exemption certificate to be signed by school physician.

That has already been alluded to.

11. Anti-cigarette laws.

There were several proposed bills on that subject, the most stringent of them being to absolutely prohibit the manufacture and sale of cigarettes in the Commonwealth.

12. Enlargement or establishment of cemeteries to be approved by the State Board of Health.

That was a measure in line with the one to give the State Board co-ordinate powers with the local boards. That stirred up a tremendous amount of local feeling, and it was felt wise to abandon efforts in that direction.

13. Prohibiting marriages of persons afflicted with certain diseases, such as syphilis, epilepsy, etc.

14. Contamination of the Merrimac and Connecticut Rivers.

15. Dredging the Neponset Valley.

16. Protection of food exhibits from flies, dust, etc.

17. The so-called drawn poultry bill.

18. To regulate the making and selling of ice cream.

19. To provide that when patent drugs or foods are ad-

vertised the advertisement shall make clear the amount of alcohol, opium or chloral hydrate present.

20. To prohibit Boards from allowing stables to be built within 200 feet of dwelling houses, schools or churches.

I think that last includes all of the petitions and bills that were brought before the Health Committee.

Curiously enough this year no attempt was made to secure the passage of an anti-vivisection law, or to repeal the present vaccination law. (Applause).

THE PRESIDENT: These subjects are now before the Association. I think I see in the audience here a gentleman who had a great deal to do with the procuring, or at least was very much interested in the legislation with regard to which I spoke to you. I think we should all be very glad to hear from Mr. Winslow.

PROF. WINSLOW. Mr. Chairman, I think there remains very little to be said about the measure for creating health districts after the President's summary of the question. That feature of the bill which transfers the inspection of factories from the State Police to the new district inspectors of the board is one in which I have been deeply interested. The members of this Association may remember, perhaps, that the question of the condition of factories and workshops in the State was brought before this body a little over three years ago, at the April meeting in 1904; then, for the first time, public attention was called to the need for reform and the campaign which has culminated this year was begun. At that time this Association adopted a resolution urging an investigation by the State Board of Health of the conditions of factories and workshops, and that resolution of this Association was brought up on the floor of the House and was instrumental in securing the first investigation by the State Board of Health of factory conditions. The first investigation

made clear the need for further study of the subject, and two years ago the Legislature directed the State Board to make a second, a more exhaustive one. The results of that second study, as reported last winter, was so striking as to furnish an overwhelming argument for some reform in the method of controlling factories and workshops. The laws on those subjects are of a wholly general character, leaving the interpretation and the application of the law in a particular case to the inspectors. The inspectors of the State Police not being trained men, medical men or sanitarians, proved wholly unable to interpret those laws so as to maintain sound sanitary conditions, and it was clearly for the advantage of all concerned, the workers and the employers and the public, that some change should be made.

As our President has said, this law creating sanitary districts forms the climax of the scheme of advisory health legislation which has been built up in this State, and it must be a wonderful thing for the President to look back on the whole plan, so largely the result of his own work, to feel that it is now complete. This measure, however, from another viewpoint, marks the beginning of a totally new field of work for the State Board of Health. At the same time these medical inspectors complete the advisory and scientific organization of the State, they mark the entrance of the State Board of Health into executive work, because the control of factories is necessarily an executive function. As society becomes more complex, we must have more executive work all along the line. We must tend to enlarge the powers of the State and to place those powers in the hands of the authority which can exercise them best. Since it has proved that a non-expert body is unable to exert a proper control over factory sanitation, it has seemed to the Legislature best to lay the responsibility upon the only body which can scientifically and efficiently fulfil it.

The success which the State Board has attained in its pre-

vious lines of work makes it certain that in the control of sanitary conditions in factories and workshops, which is a new field in America, Massachusetts, through its board, will take the same leadership that it has already taken in water supply and in sewage disposal and in all those functions which the board can exercise from a purely advisory standpoint.

It seems to me that all of us who are interested in sanitary matters in Massachusetts ought to feel proud of this new law and grateful to Dr. Wheatley for his share in procuring it. It is a great thing to have a fine body of inspectors, who will bring the conditions in the factories up to the standard where they should be. It can be done without damaging any one. It can be done, as has been shown again and again, without great expense, and with advantage to the employer as well as to the employee, and with the greatest advantage to the public. It is a cause for great congratulation, I think, that with the general system of medical inspection, which rounds out and completes the broader powers of the Board of Health, this vital connection with the industrial life of the community has also been established. (Applause).

THE PRESIDENT. We shall be very glad to hear from any one who takes an interest in this subject, or in fact from any one who has any question to ask with regard to these matters. Failing the man with the question, I think we should like to hear from Dr. Chapin. (Applause).

DR. CHAPIN: Mr. President, when there were only two colonies in New England, Massachusetts and Connecticut, it seemed desirable for certain reasons that another should be founded, and owing to the good efforts of Massachusetts people Rhode Island was founded. It was important then that we should have a number of points in this country where different experiments could be tried, and a very useful experiment was tried in Rhode Island. It has had a wonderful influence upon this country. But conditions have changed, and

I was thinking as I listened to what you told us to-day about this very excellent law, giving your board so much authority and enlarging your field of labor so much, and what the doctor told us about the other laws that had been passed, and perhaps what, as he said, is equally important, the laws which were not passed, I could not help feeling sorry that Rhode Island, having done its good work, could not now be united to the Commonwealth of Massachusetts. (Applause.)

THE PRESIDENT. Mr. Gove, your ancestors and mine in Salem had a good deal to do with driving Roger Williams out. Perhaps you can say something on this subject. I think you ought to after what Dr. Chapin has said.

MR. GOVE: Mr. President, I am afraid I shall have to disappoint you. In the first place, my ancestors, with one exception, do not appear to have come from Salem, where I reside most of the year, but from the edge of the next State, New Hampshire, where I am residing just at present in the summer. That is outside of the jurisdiction of this Commonwealth, and it is not affected by the laws which are passed here.

I was very much interested in hearing the clear, concise summary of the laws which have been passed during the past Legislature. I think some are likely to prove very useful. But from my own observation while a member of the Massachusetts Legislature and from my observation since, I can most heartily concur with what the doctor in the Senate says about the importance of not passing laws which had better remain unenacted. I am much interested in that phase, as well as in the other one, and I think great caution should be exercised in regard to the passage of laws. There is one thing to be remembered in regard to all laws, whether good or bad, and that is that the most important thing about them is to see that they are properly enforced. It only brings disrepute upon the law, and causes many evils, to have any law passed which is not well enforced. Worse than that is to

pass a law which ought not to be enforced. (Applause).

THE PRESIDENT: Is there any other business to come before the Association at this time? If not, it is moved that we now adjourn.

The motion prevailed and the Association adjourned.

COMMUNICATIONS.

(*Circular Letter from American Medical Association.*)

Chicago, June 20, 1907.

Dear Doctor:—At the Atlantic City Session of the American Medical Association the following resolutions, regarding the work of the Council on Pharmacy and Chemistry, were presented by the Reference Committee on Reports of Officers and were unanimously adopted by the House of Delegates.

Whereas, The Council on Pharmacy and Chemistry, after examining many hundreds of preparations, has officially announced its approval of a large number of such preparations; and

Whereas, We believe that the editors of many medical journals in this country, both official organs of State Associations and privately owned journals, are desirous of co-operating in the work of freeing the medical profession from the nostrum control; therefore, be it

Resolved, That this Association most earnestly requests all medical journals to refuse to aid in promoting the sale of preparations which have not been approved by the Council, by refusing advertising space to such preparations; and be it further

Resolved, That we most earnestly request the moral and financial support of our members for those medical journals,

whether privately owned or controlled by medical organizations, which disregard commercialism and stand firm for honest and right dealing, thus sustaining the Council in its greatest work for the medical profession.

In accordance with the instructions of the House of Delegates, I am sending you a copy of these resolutions in the hope that the American Medical Association and its Council on Pharmacy and Chemistry may have your support and cooperation in this most important work. I am also sending you a list of the preparations that have thus far been approved by the Council, as well as some articles reprinted from The Journal, which will, I hope, be of interest to you.

Very truly yours,

GEORGE H. SIMMONS
General Secretary.

[The above resolutions meet with our hearty approval.—Ed.]

CHEMICAL LABORATORY NOTES.

FRANKLIN C. ROBINSON

Professor of Chemistry, Bowdoin College, Brunswick Maine.

NEW DISINFECTANTS. When anhydrous oxalic acid is mixed with such well known substances as carbolic acid, cresols, naphthols, sulfonic acids, formaldehyde, etc., the resulting mixture is a solid which can be pressed into cakes or tablets, and these are convenient and cheap for disinfecting vessels in a sick room, where bichloride of mercury is generally used. Of course such mixtures are poisonous. The process has recently been patented in England and Germany.

FORMALDEHYDE IN SOAP. Various attempts have been made to prepare a disinfecting soap by incorporating

formaldehyde with the soap stock, but they have hitherto failed because the formaldehyde is soon oxidized and destroyed. But it is claimed now that if a small amount of normal sulfite of an alkali metal be present this oxidation is prevented. This claim is the subject of a recent United States patent.

COMPARISON OF PHENOL AND CRESOLS AS DISINFECTANTS.* Previous experiments by M. W. Blyth and others have shown that the cresols (the active disinfectants in creolin, lysol, cyllin, solutol, solveol) are stronger disinfectants and less poisonous to human beings than phenol (carbolic acid). Now Blyth and Goodban give an expression to this difference in what they call the "dilution figure." They find the dilution figure for the cresols to be 270 and for phenol 130, meaning by these that one part of pure cresols diluted with 270 parts of water will kill the test organisms in 12.5 minutes but not in 10 minutes, while phenol will only stand a dilution with 130 parts of water to be equally effective. They used B. coli as a test organism. They proved also that mixtures of phenol and cresols had dilution numbers corresponding to the amount of each present, thus showing that each had no influence on the other. The tests were made by adding 5 grams of the disinfectants to 25 c. c. of a solution containing 10 grains of pure potash soap and 10 grams of pure resin soap made up to 100 c.c. with water. The incubation was at 22 degrees C.

In a mixture the percentage of phenol and cresol can be found by use of the following formula, where, for example, P=per cent. of phenol; D_1=dilution figure for cresols; D_2=dilution figure for phenol; D_3=dilution figure for the mixture.

$$P = \frac{100\,(D_1 - D_3)}{D_1 - D_2}$$

*Analysis 1907. No. 32.

It should be remembered that the presence of organic matter interferes seriously with the disinfecting power of both phenol and cresols. 5 c.c. of milk added to the test solution made as above lowers the dilution figure of cresols to 170 and of phenol to 90.

NEW TEST FOR PROTEIDS.* The author finds that Hehner's test for formaldehyde in milk can be used as a general test for proteids, and hopes that it may prove of value also in distinguishing complex from simple proteids.

He applies the test as follows:—to a small amount of the suspected proteid is added about 2 drops of a 1-5000 solution of formaldehyde, then, after a minute or two, about .5 c.c. of concentrated commercial sulfuric acid is carefully added so that two layers of liquid are formed. In the presence of proteid of any kind the violet colored zone appears at the junction of the fluids.

A few non-proteids, as amido-guanidine nitrate, and murexid, give a similar color, but they give it also with the sulfuric acid and water alone.

FURTHER WORK ON FORMALDEHYDE AS A DISINFECTANT.† T. B. McClintoc has repeated the work previously done and in general confirmed it. He finds that the formalin-permanganate method of disinfecting rooms, which was first made practical by the work of the Maine Laboratory of Hygiene, is the best. The humidity of the room should be 60 and the temperature not below 65 degrees F. Two hours' exposure is then enough. For details consult the original bulletin or that of Maine State Board of Health for March, 1907.

*Am. Chem. Jour. June 1907, S. F. Acree.

†Lab. Pub. Heal. Mar. Hos. Service, Bulletin 27.

PERSONAL HYGIENE.

By Percy G. Stiles, Ph. D.
Instructor in Physiology, Massachusetts Institute of Technology.

PROFESSOR FISHER'S EXPERIMENTS ON DIET AND ENDURANCE.* Another important paper has come from New Haven and added materially to the data in favor of restricted eating already gathered at Yale. Professor Fisher, the author, disclaims expert knowledge of physiology, but has presented his results nevertheless in clear and telling form. Under his supervision nine students adopted the practice of protracted mastication ("Fletcherism"). The usual results were obtained; that is to say, the appetite was satisfied with much less food and proteid was reduced even more notably than the total ration. At first the change was purely instructive and not aided by any suggestions as to the choice of food; later the men used tables showing percentage composition and gave the preference to low proteid foods when the appetite did not oppose.

Severe tests of muscular endurance were made at the outset, in the middle of the five months' term, and at the close. Meanwhile there was no physical training whatever. The men took less exercise than had been their habit. But the tests showed a very striking increase in the power to make repeated movements not involving the utmost exertion. In other words fatigue was not so readily induced on the low diet as at the time of the earlier trials when the metabolism was greater. The power to make maximal efforts was not increased.

Professor Fisher does not speculate at any length respecting the cause of this postponement of fatigue. It will be of

*Trans. of the Connecticut Academy of Arts and Sciences, XIII, p. I.

great interest to learn whether it is due to a lower proteid metabolism which means a system comparatively free from nitrogenous decomposition products, or whether it is specifically due to a lessened ingestion of meat with consequent reduction of the extractives at large in the body. In the second case we should be led to single out the nucleins and the extractives of animal food as to blame for premature fatigue and we might not have to bring all proteids under the ban.

We understand that further work is planned and that a new squad of volunteers has been secured. In the research reported observations began in winter and ended in summer. More or less unconscious reduction of the diet was to be expected with the advance of the season, but this by no means invalidates the results. Probably the forthcoming study, begun as it will be in warm weather and running into the winter, will parallel the first in all essentials. Professor Fisher admits the same backsliding among his subjects when released from discipline that Benedict noted with regard to Chittenden's men. He believes this to be owing to environment rather than instinct.

A NEW STUDY OF MIGRAINE. Dr. S. I. Franz, of the MacLean Asylum, has recorded a most careful study of the systemic conditions prevailing in a patient subject to severe and frequent headaches.* His own diligence in pursuit of his purpose and the painstaking and intelligent co-operation of the sufferer are equally to be commended. The research is a model investigation of a hygienic problem. But the results are largely negative. It would seem that there should be some simple and definite cause for an acute trouble like migraine and to find and remove it would be to bless a large fraction of humanity. But the condition is really most baffling and obscure. Dr. Franz finds no evidence from the urine of a perverted metabolism at the time of the attacks.

*Am. Journ. of Physiology, XIX, p. 14.

He cannot refer the pain entirely to increased blood-pressure for while there is usually such abnormal pressure it is as marked on the comfortable as on the aching side of the head. Neither does a reduction of pressure always give relief. After reading this article one will hesitate to attribute headaches to unhygienic conditions which the subject can remedy. No doubt indigestion, constipation and eye-strain aggravate the trouble, but the root seems to be in the vague realm of "constitutional" tendencies.

VETERINARY HYGIENE.

V. A. MOORE B. S., M. D.
Professor of Comparative Pathology and Bacteriology New York State Veterinary College, Ithaca, N. Y.

A COMPARATIVE STUDY OF TUBERCLE BACILLI FROM VARIOUS SOURCES. Those who are interested in the investigations relative to the relation existing between tubercle bacilli, especially of man and of cattle, will find considerable data of interest in the recent bulletin of the Bureau of Animal Industry by Drs. Mohler and Washburn. The bulletin, after giving a brief historical summary, enters into the discussion of tubercle bacilli which they isolated from various sources. The results of their work as set forth in this bulletin can not be better or more justly presented than to quote their conclusions, which they believe to be justifiable from the results of the experiments performed in the laboratory of the Bureau and other laboratories.

Conclusions.

"1. While certain peculiarities of growth, morphology and pathogenesis are observed with a fair degree of constancy in bacilli of human origin, nevertheless these characteristics are not universal, and notable exceptions are observed which would confuse those who would attempt to establish their

origin by means of such characteristics.

"2. A similar degree of constancy in the morphological, biological and pathogenic characters of the bovine bacillus is generally noted, but a certain range of differences has been observed, which, though apparently more limited than for the human bacillus, is nevertheless suggestive of aberrant forms.

"3. Therefore the assertion, based solely on these facts, that a bacillus has a certain origin, can only be tentative, as bacilli from man have been found which conform in all respects to bacilli obtained from cattle.

"4. Tubercle bacilli of widely different virulence may be encountered in different cases of bovine as well as of human tuberculosis.

"5. There is a certain proportion of cases of human tuberculosis in which may be found tubercle bacilli which are pathogenic for cattle.

"6. Dependent upon the medium in which grown—whether in vitro or in vivo—tubercle bacilli will present special characteristics in accordance with their different environment, and these characteristics may lead to a supposition relative to their origin, although they are not always fixed or unchangeable.

"7. The numerous instances above recorded in which the inoculation of cattle with tubercle bacilli from human sources has resulted in the production of tuberculosis must prove decisively that tubercle bacilli of human origin have been pathogenic to the bovine, or, on the other hand, the bacilli must have been bovine in origin, and in spite of this fact were readily able to obtain a footing within the human tissues, in either case demonstrating the transmissibility of the differing types from one species of mammals to another.

"8. The more the subject is studied the more numerous are the instances noted in which the bacilli appear naturally in animals that are far removed from the species supposed to be their usual host, thus proving that they are not closely

limited in their choice of victims and that there is no character possessed by any of these types of tubercle bacilli in one host that may not be found in another host under favoring conditions.

"9. Upon examination of the results obtained from inoculating bacilli marked 'Boy V' in this experiment it will be at once noticed that it possesses a remarkable degree of virulence, in this respect surpassing many that we have obtained from bovine sources. Culturally, morphologically, and pathogenically this culture conforms closely to the bovine type. Could it be shown to have originated, previous to its attack upon the boy, from a bovine source, its fatal effects upon the child's system would offer incontestable proof of the susceptibility of the human organism to the inroads of the bovine tubercle bacillus. If, on the other hand, the bacilli for many generations past have successively grown upon human hosts only, we must at once admit that in this instance the type approaches so closely to the bovine form that all of the prominent characteristic differences between them have been removed, and we have before us a tubercle bacillus of human origin that has become so modified by peculiar environment that it is no longer a representative except in name.

"10. There are human types of bacilli that are similar in morphology and biology, but vary as to their virulence; and, conversely, there are bovine bacilli typical as to form and growth, but less pathogenic than those usually observed.

"11. If we exclude culture BB, which has already been included in Ravenel's description of bovine organisms obtained from human tissues, it will be observed that of four cultures obtained from children, one gave all the known reactions to the various test applied for placing it in the bovine class. It will also be noted that of nine cultures of bacilli obtained from sputa, one was entirely beyond the virulence possessed by the others, although not so pathogenic as some organisms coming from bovine animals, but nevertheless indicating the differ-

ence in degree of virulence among sputa bacilli. Of the eight germs obtained from cattle, hogs, and sheep, one was observed which had a modified virulence when compared with the high pathogenicity of the others tested, again illustrating the variability of virulence of bovine germs.

"12. The question of the transmissibility of tubercle bacilli of bovine origin to man will not be here further discussed from these experiments; but sufficient evidence, in our judgment, has been adduced to warrant the adoption and enforcement of sanitary measures against the use of the meat and the milk of tuberculosis animals, and to make it advisable to eliminate all tuberculous cattle from the herd or to sterilize all the milk therefrom. While the greatest amount of tuberculosis in man is undoubtedly caused by its spread from human to human, the frequency of its infection from animals should not be underestimated.

MUNICIPAL SANITATION.

CHARLES V. CHAPIN, M. D.
Superintendent of Health, Providence, R. I.

BACTERIA IN SEWER AIR. It has of late been believed that the chance of the transmission of the infectious diseases by sewer air is *nil*. A number of examinations have been made which have indicated that sewer air is comparatively free from germs, and attempts to isolate pathogenic bacteria from the air of sewers have given negative results. A recent work by Horrocks* indicates that pathogenic germs may be carried by sewer air. Major Horrocks, among other numerous experiments, inoculated the sewage of a large military hospital at Gibraltar with a culture of *B. prodigiosus*. The culture was

*Public Health, May 1907, page 495.

put into the water closets and the bacillus was recovered on plates suspended in the top of the soil pipe, in catch basins, and in manhole openings in the street many feet distant. The experiments were carefully conducted and control plates showed that the organism was not found in the air of Gibraltar. One should not, however, hastily jump to the conclusion that sewer air is commonly a vehicle of infection. There is practically no clinical evidence to show that typhoid fever and other infectious diseases are transmitted by sewer air, and, indeed, the evidence that diseases in general are often air borne is very slight. There is on the contrary evidence to show that minute infected droplets, or dust particles, may float in the air in considerable numbers without causing disease. Until this subject has been further studied it is to be hoped that health officers will not be in a hurry to resuscitate the sewer gas bogey.

RECURRENCE OF DIPHTHERIA AFTER DISINFECTION.† In Baltimore the isolation of diphtheria does not terminate until negative cultures are obtained from all members of the family, and the house has been disinfected. The disinfection is tested by exposing organisms in a room, and in 1905 the organisms were killed in 1508 out of 1792 disinfections. Nevertheless the disease recurred within two months in seventeen instances, or 1.77 per cent. of the 962 reported cases. In Providence in the two years, 1905 and 1906, in 516 families (not cases) where there was no disinfection, and isolation was terminated without cultures ten days after the disappearance of the membrane, there were 8 recurrences, or in 1.55 per cent. of the infected families.

TYPHOID FEVER AND DISINFECTION.‡ A recent report on typhoid fever in the District of Columbia refers to a careful investigation of the measures that were taken to disin-

†Report of the Health Department of Baltimore, 1905, page 107.

‡The Origin and Prevalence of Typhoid Fever in the District of Columbia Hygienic Laboratory, Bull. 35, Public Health and Marine Hospital Service.

fect the excreta of 492 cases of typhoid fever treated in their homes in the district of Columbia. It was stated that in only 145 cases was the disinfection efficient, it was of doubtful efficiency in 51 cases, and entirely ineffectual in 286. It is probable that home disinfection is equally inefficient in most American cities. Certainly this should not be so, and the report referred to justly blames the medical profession for its neglect in the failure to see that proper disinfection is carried out. Failure to properly care for the excreta results often in the extension of the disease in typhoid infected families. This report estimates that six per cent. of the cases in Washington were due to this cause. In Providence, during the last five years, about ten per cent. of the cases of typhoid fever have been due to "contact infection" in the family of the initial case. Proper care of the excreta is neither difficult nor expensive, and there is no good reason why it should not be insisted upon in every instance.

Contact infection with carrier cases is coming to be recognized as the most important factor in the extension of typhoid fever. A notable case in New York City where a well woman infected with typhoid bacilli gave rise to the disease in several families where she worked as a cook, has found its way into the daily papers.* Similar cases have been reported elsewhere, and a good resume of the literature on this subject may be found in the report from the Hygienic Laboratory above referred to.

*Journal of the American Medical Association, 1907, I p. 2019.

SANITARY ENGINEERING NOTES.

By Robert Spurr Weston.
Assoc. M. Am. Soc. C. E.

THE POLLUTION AND SELF-PURIFICATION OF NATURAL ICE.† The author describes many cases of disease attributed to the pollution of ice, and sums up the instances as follows: Out of some six epidemics assigned to ice infection, in only one was the number of cases reported greater than twelve. Four were merely intestinal disorders, not due to specific germs. Ice may be infected (1) from the harvesting of ice from polluted sources, (2) during harvesting or from the operations of harvesting, (3) from the surface drainage during thaws, (4) and from exposure in handling and delivery. However, natural agencies work to thwart these, especially subsidence and oxidation of suspended matters, including bacteria and the removal of these as well as dissolved matters during freezing. Again, low temperature affects the vitality and life of bacteria, and the time element is also of importance. Natural purification of ice as ordinarily handled exceeds that of the sand filter by some two hundred times. In spite of this, however, there is danger from certain sources mentioned above, particularly the last three, as well as from artificial ice made from polluted water and marketed without storage before natural purification agencies have time to operate. Hence, constant watch of ice supplies should be kept.

PROGRESS ON NEW YORK CITY'S CATSKILL WATER SUPPLY SYSTEM: DAMS OF THE ASHOKAN RESERVOIR. * This supply, to bring 500,000,000 gallons of water per diem to the city is to be taken from the Catskill Mountain region. The reservoir is to be twelve miles long with maximum width of two miles divided into two basins of

†Eng. News, 57, p. 454.
*Eng. News, 57, p. 518.

nearly equal sizes. The masonry (approximately 1,000,000 cubic yards), earth dams (6,000,000 cubic yards) across the Esopus and a series of earth dikes closing the valley of Beaver Kill, etc., will be nearly two miles in length, and will cost from ten to twelve millions of dollars. The upper dam is to be five thousand feet long with maximum height above the river gorge of about two hundred feet. There will be a central gate-house capable of handling 1,200,000,000 gallons daily, the first outlet for nearly eleven miles of aqueduct. This aqueduct will pass beneath the Hudson at Storm King.

EXPERIMENTAL SEWAGE TREATMENT WORKS FOR BALTIMORE, MD.†

MUNICIPAL SEWAGE EXPERIMENTAL STATION AT WATERBURY, CONN.

These two experimental sewage disposal plants have been erected in their respective cities for the demonstration of the methods of sewage disposal adapted to the respective sewages, and to elucidate some special points in connection with the methods thought practicable. Both stations are equipped with filters of different types, and chemical and bacteriological laboratories for observing the results of operation. The study of the efficiency of different forms of sprinklers for distributing sewage over trickling filters has been taken up with great care. These stations are examples of the scientific method which is coming to be employed more and more for the adaptation of standard system of sewage disposal to peculiar local conditions.

THE SANITARY ENGINEERING PROBLEMS OF WATER SUPPLY AND SEWAGE DISPOSAL IN NEW YORK CITY. ‡ This address, delivered at a meeting of the section of public health of the New York Academy of Science, states the opportunities for collection of new sanitary facts as

†Eng. News, 57, 35-36.
*William G. Taylor, Eng. News, 57, 238-242.
‡Geo. A. Soper, Sci. 25, 601.

well as the assimulation of data produced by scientists to mold public opinion toward a proper consideration of the topics which relate to public health. The author gives in brief the great problems of New York and the provision being made for its increased water supply demand, as well as investigations in regard to the future sewerage system. Those problems which have been solved have been done, he says, not by the unaided capacity of the head of the department, but with the help of qualified experts, and the future considerations of the sanitary engineering problems of New York must be done in the same way.

NOVEL SPRINKLER MOTOR FOR THE PERCOLATING SEWAGE FILTER AT WELLINGTON, ENGLAND.† This is a description of a sewage sprinkler of the revolving type, which is kept in constant motion by means of the power obtained from the flow of the effluent in the channel about the circular beds. Such a device has just been built for Wellington, Somerset, England, where six beds, each 50 feet in diameter, capable of dealing with 540,000 U. S. gallons in 24 hours, have been built at a cost of some $90,000.

TWO YEARS' OPERATION OF THE MUNICIPAL GARBAGE REDUCTION PLANT AT CLEVELAND, O.‡ Little data exists concerning the cost of garbage collection and disposal. Two years ago the city of Cleveland bought the garbage reduction works of a private company. The article gives the cost of garbage collection, reduction and disposal in a detailed manner, which cannot be further condensed or reviewed. In 1906, 34,891 tons of garbage were disposed of at a cost of $186 a ton, or at a net cost of $0.147 per capita per annum. The original plant bought by the city was on the Chamberlin system, but in 1905 five of the fourteen old digestors were replaced by five-ton steam-jacketed digestors. By the old process 2.63 per cent. of grease was extracted,

† **Engineering News, 57, 485.**
‡ **Eng. News. 57, 487.**

while by the new process 3.75 per cent. can be extracted. The actual yield of grease in 1906 was 3.06 per cent., valued at $72,916. Besides this $26,574 worth of dry tankage were extracted and sold, as well as $2,981 worth of pressed tankage. The article is based upon a report by Mr. Springborn, Superintendent, and is well worth careful reading.

COPPER SULPHATE USED AT PAWTUCKET, R. I., TO PREVENT THE CLOGGING OF SEWAGE BEDS BY MICRO-ORGANISMS.* Frequently the sewage beds at Pawtucket become clogged during summer. This clogging was caused by a blanket growth of Oscillaria and other organisms. It was necessary at times to scrape the beds to a depth of 6 or 8 inches and replace the sand removed in this way. Finally an application of copper sulphate was made to the beds and the distributing piping and manholes were scrubbed with a solution of copper sulphate. After this treatment growths of Oscillaria and other organisms ceased. The beds are now working as well as during former years when the growths did not occur. The nitrification of the beds was not injured in the least by the addition of copper sulphate.

THE SANITATION OF AIR.† This is an abstract of an article by Konrad Meier in Popular Science Monthly.

The author quotes recent experiments of Fluegge which showed that ill effects of air in crowded assembly rooms are due to the disturbance of thermo functions of the body by heat and moisture, rather than to the exhaustion of the air. While the effect of exhausted air may have been over-estimated, that of contaminated air does not seem to have been realized sufficiently. Foreign gases may react directly with blood, but these are unusual sources of contamination, are local, and may be done away with quite easily. This is not true in the case of floating particles.

*Engineering Record, 57. 379.
†Engineering Record, 55, 158-59.

Asher has shown that a smoky atmosphere encourages perspiratory diseases. The effect of dust as a carrier of disease germs is noted. The presence of bacteria in the respiratory tract is not the only cause of disease. Irritation by dust is a predisposition. This dusty condition explains the increasing prevalence of pneumonia in large cities—30 per cent. increase in New York for 1905, as compared with 1904. Concentration of population increases faster than the measures for the alleviation of the dust and smoke nuisance.

Because it is practicable to burn coal without smoke, no restriction should be placed upon the use of any coal, but no black smoke should be permitted within city limits. The dust of the streets, containing a large amount of animal refuse, is one of the chief sources of contamination. Dust of this character works into the New York Subway and settling upon the rough roadbed, cannot be removed. Stuffy air in buildings is often due to old dirt accumulated in corners and other dirty conditions, rather than to the character of the original air.

The author discourages the use of humidifiers in heated rooms, stating that the human system accommodates itself to the changes in humidity without discomfort within certain limits. Registers and radiators which gather dust are to be avoided. Very hot radiators volatilize organic matter deposited upon them. This process begins at 75 degrees C. and is rather assisted by moisture. Radiators should be simple and accessible. Heating surfaces should be ample and the temperature moderate. Artificial humidifiers are apt to become foul and malodorous. Devices for artificial cooling should not raise the humidity in summer or ill effects will follow. Artificial ventilating apparatus must be well designed and operated. Air filters should be cleansed in such a manner that the impurities removed will not again contaminate the air. Mechanical ventilating apparatus often fail to exercise sufficient control over draughts and temperature.

The depressing action of the effluvia of crowds of people

is because of its effect upon the nerves, rather than because of the presence of an abnormal amount of carbonic acid. Not only should the air be present in sufficient quantity, but the out of doors from which it comes should be kept clean. Cleaning, painting, repairing, street cleaning, etc., should not be neglected. The field of sanitary inspection should be extended to all public highways, byways, conveniences and conveyances.

Ventilation is not the only cure for vitiated air. To ventilate with smoky or dusty air is folly. Laws for the ventilation of public halls and conveniences need to be made. Natural ventilation should be employed if possible; otherwise use mechanical or forced ventilation. Moderate volumes of air well applied are better than large volumes applied indiscriminately or ununiformly. School parks, playgrounds, and a clean out of doors generally, are urged very strongly.

RESULTS GAINED BY THE COMPLETE REALIZATION OF THE PHYSIOLOGICAL CONDITIONS WHICH RESPIRATORY APPARATUS OUGHT TO SATISFY TO PERMIT THE EXISTENCE AND WORK OF MAN IN IRRESPIRABLE ATMOSPHERES WITHOUT DANGER.† For a respiratory apparatus to be practical it must not modify any of the physiological conditions of normal breathing. It must fulfill certain rules which the author has grouped as follows:

From the point of view (1) of respiratory mechanics, (2) of respiratory chemistry, (3) of man's safety, (4) of its durability. With these principles in mind, the author has constructed an apparatus which he does not describe, but he does describe interesting experiments with the apparatus. He tests the length of time it can be used, breathing being perfectly normal after five hours; its working capacity, a man with a

†M. J. Tissot, Compte Rondue, May 27, 1907, p. 1172.

weight on his head being able to walk up and down laboratory stairs over seven meters high, fifty times without stopping, ceasing then only because of fatigue to his limbs; its hermetic quality, the experimenter remaining in a room filled with illuminating gas for four hours without disastrous effect. It does not cause the number of respirations to rise above the normal (adult, man, 14 to 17 per minute; adult, woman, 15 to 18 per minute).

RESEARCHES ON THE ACTION OF SULPHUR WATERS IN THE MERCURIAL TREATMENT. A. Desmoulieres and A. Chatin. The authors give the results as well as a description of the experiments to ascertain to what one should attribute the well-known tolerance of the human organism in regions abounding in sulphur water to large doses of mercury than are usually possible to give, and how sulphur makes this remarkable absorption easy. The alkaline chlorides of the body play an important part in redissolving the albumens precipitated by mercurial salts, but the authors' experiments show that sulphur has a much more energetic action. Formerly it was believed that the therapeutic action was due to the formation of an inert salt and insoluble sulphide of mercury. The authors prove it rather to be due to an increased power of blood serum to dissolve albuminates of mercury.

SOME EXPERIMENTS WITH FLUORESCEIN AS AN AGENT FOR DETECTION OF POLLUTION OF WELLS.† The article is the result of experiments performed in Johannesburg, South Africa, to ascertain the cause of the presence of *B. Coli* in the water of one of the well supplies by the use of Fluorescein. It was found that water from a swamp was being admitted unfiltered to the well, and this led to the discovery of a fissure in the rock leading from the well. The report of the experiments is very complete, the conclusion being that Fluorescein does percolate through the

†M. McCrae and P. G. Stokes, J. Hyg. 7, 181-192.

soil, its rate varying according to the strata through which it flows; that it is harmless in the quantities used, and that evaporation of the samples of water renders the detection of this chemical more certain. Experiments are also described to disprove the theory that the method is of little use because it does not logically follow that bacteria can go where Fluorescein can. A harmless species of bacteria was introduced into the swamp and its presence was detected later in the well.

PUBLIC HEALTH LEGISLATION, NEWS AND NOTES

By F. H. Slack, M. D.,
Assistant Director Boston Board of Health Laboratory.

For the following notes we are indebted to the Medical News Columns of the Journal of the American Medical Association.

FREE DISTRIBUTION OF ANTITOXIN—ILLINOIS.† Under the omnibus appropriation bill the State Board of Health will be allowed $15,000 yearly for free distribution of antidiphtheretic serum outside of Chicago. The appropriations of the State Board of Health have been materially increased also by this bill, the sum of $119,200 having been appropriated for the work of the Board, against the sum of $83,320 granted by the General Assembly of 1905.

NEW SANITARY ACT—ILLINOIS.‡ A bill conferring additional powers on the State Board of Health has passed both houses and become a law without the Governor's signature. It gives the Board supreme authority in all matters of quarantine and makes it the duty of all local boards of health to enforce the rules and regulations adopted by the State Board. A severe penalty is provided for violation of the regulations of the State Board of Health, which is empowered

†A. M. A. Journal May 11, 1907.
‡A. M. A. Journal May 11, 1907 & May 25, 1907

to enforce health measures in cities and villages when the municipal authorities neglect or refuse to act with sufficient promptness or efficiency, and to collect from the city or village all necessary expenses incurred.

MEDICINE VENDORS BARRED—NEBRASKA.† Itinerant medicine vendors have been barred by the city council from obtaining licenses to sell their wares on the streets of Omaha.

TWO ANTICOCAIN BILLS PASSED—NEW YORK.† Without discussion or opposition, the Senate passed the bill making it a felony to sell cocain and eucain except on a physician's prescription; also the Whitney bill which also prohibits the sale of these drugs except on a physician's prescription, but provides a different system of prosecution and less severe penalties.

MAYOR APPROVES OF MILK STATIONS—NEW YORK CITY.† Mayor McClellan has signed the resolution adopted by the Board of Aldermen asking the Board of Estimate and Apportionment to issue special revenue bonds for $8,000, the proceeds to be used for the erection of milk stations in the parks.

CONSUMPTIVE CAMPS—PENNSYLVANIA.† The Senate approved the appropriation of $600,000 for sanatoria for indigent persons infected with incipient tuberculosis.

ANTI-VACCINATION BILL—PENNSYLVANIA.† A bill to permit the admission to schools of pupils whose physical condition makes vaccination dangerous to their health was passed finally by the Senate, May 7.

REGULATION OF MARRIAGE—PENNSYLVANIA.† The Senate passed the bill to prohibit marriage on the authority of licenses issued more than thirty days prior to such ceremony, providing that no marriage licenses shall be issued unless the parties shall first give certain information, and re-

†A. M. A. Journal May 18, 1907.

quiring this information to be certified to the department of health.

PURE FOOD LAW—TENNESSEE.† The Tennessee legislature has adopted the pure food bill introduced by Dr. W. B. Marr, and known as House Bill No. 141. The bill as adopted is an admirable one and can not but accomplish much good in the State.

DISTRIBUTION OF SAMPLE MEDICINES—NEW JERSEY.* An ordinance which became effective Feb. 22 provides "that no person shall distribute, deposit or leave on any street or private place, any medicine, medical preparation or preparation represented to cure ailments or diseases of the body or mind, or samples thereof, or any advertisement or circulars." The penalty attached is a fine of $50.

ANTI-SPITTING ORDINANCE—DELAWARE.‡ Dr. Harrison W. Howell, Wilmington, president of the State Board of Health, has drafted an anti-spitting ordinance for Wilmington to make it unlawful to spit on any sidewalk, or on the public floor of any hotel or lodging house, or on the floor, platform, steps or stairs of any public building, church, store, factory, street car, etc., and providing for a fine of from $5 to $20.

OPTOMETRY BILL VETOED—ILLINOIS.‡ Governor Deneen has vetoed the bill to regulate optometry. The Illinois State Medical Society, at its meeting in Rockford on May 23, extended a vote of thanks to Governor Deneen for his action. With the veto of this bill the medical profession of Illinois has succeeded in killing every objectionable bill introduced in the Forty-fifth General Assembly, including four "osteopathic," two "medicine peddler," two "optician," three "magnetic healer," and one "antivivisection" bill. Incidentally every measure strongly supported by the medical profession became a law.

†A. M. A. Journal May 18, 1907
*A. M. A. Journal May 25, 1907.
‡A. M. A. Journal June 1, 1907.

SCHOOL PHYSICIANS AUTHORIZED—NEW JERSEY.* The School Board of Atlantic City has authorized two school physicians at a salary of $400 per annum each, whose duty it will be to look after defective children and pupils who need medical attention.

PURE FOOD LAW—WASHINGTON.§ The pure food law recently enacted by the legislature is nearly identical in its essential features with the National Pure Food and Drug Act. The penalty for violating the law is, for the first offence, a fine ranging from $25 to $500, and for subsequent offences imprisonment.

WESTERN DISTRIBUTION FORBIDDEN—IOWA.† The city council of Iowa Falls, at a special session, May 26, passed an ordinance forbidding the custom of distributing from house to house or displaying in public places and in the streets, nostrums and literature referring to private diseases, or other subjects that may have a tendency to corrupt the minds of the young.

VACCINATION SUSTAINED — PENNSYLVANIA.† Governor Stuart vetoed the bill to amend the vaccination act, providing that certificates of successful vaccination or of having had smallpox shall not be required when smallpox is not known to exist in the said locality. He said that the words "known to exist" are indefinite. "In view of the fact that vaccination is a preventive measure, it would probably afford little protection to enforce the requirements relative to the said certificates only after smallpox is known to exist therein."

ANTI-VACCINATION BILL—CONNECTICUT. An adverse report by the Committee on Public Health and Safety on the bill to abolish the compulsory vaccination law, was approved by eight of the eleven members of the committee.

*A. M. A. Journal June 1, 1907.
§A. M. A. Journal June 8, 1907.
†A. M. A. Journal June 22, 1907.

OSTEOPATH BILL KILLED—ILLINOIS.† House bill No. 318, to place an osteopath on the State Board of Health, failed of passage in the House, May 2. Another bill was designed to establish a standard for medical and osteopathic schools, to license osteopaths without examination and to confer on them "all the rights and privileges which physicians in the State now have." The State Board of Health was characterized as "an arrogant and arbitrary body having absolute power over the standards of medical schools." The bill met with the fate of the several osteopathic bills introduced in the Illinois General Assembly since 1897.

VIVISECTION BILL DROPPED—PENNSYLVANIA.† Representative Townsend's bill to prohibit vivisection has been dropped from the calendar in the legislature. This action followed an address in opposition to the measure made to fifty members of the House by Dr. S. Wier Mitchell of Philadelphia.

VENEREAL PROPHYLAXIS IN GERMAN TECHNICAL SCHOOLS—GERMANY.† By a recent ministerial decree the directors of the technical schools are instructed to make provision to have the medical inspectors of the schools give instruction in sexual hygiene at the beginning of the school year.

†A. M. A. Journal May 11, 1907.

BOOK REVIEWS.

Tuberculosis As a Disease of the Masses and How to Combat It: Fourth Issue Revised and Illustrated. Prize Essay by S. A. KNOPF, M. D., New York, *Director in the National Association for the Study and Prevention of Tuberculosis.* (*Published by Fred. P. Flori,* 514 *E.* 82*d St., New York.*)

As stated in the preface, this essay was the result of a prize competition for the best popular essay on the subject of "Tuberculosis as a Disease of the Masses and How to Combat It," at the meeting of the International Congress for the Study of the Best Way to Combat Tuberculosis as a Disease of the Masses, which occurred at Berlin in 1899. The sum of 4,000 marks ($1,000) was contributed by two Berlin merchants for the purpose of this competition, which was to be held under the auspices of the Congress. A list of eminent German professors, physicians and sanitarians was selected by the Congres to conduct this competition, which was open to all countries. Out of eighty-one essays presented, this one of Dr. Knopf's was considered to "much surpass all the others in excellence," and, accordingly, the prize was awarded to him.

The essay was first published in the early part of 1901, and since that time it has been translated into twenty-two different languages, and the present issue is the fourth American edition.

No other popular presentation of the whole subject of tuberculosis within the knowledge of the writer has ever received such universal recognition or such extensive circulation throughout the civilized world as has been accorded this essay, and the cause is not far to seek, for besides the prestige of the prize essay selected after such severe competition and such rigorous examination by such eminent authorities, the subject itself is treated in such a comprehensive, lucid and practical manner that it appeals to everyone, whether layman

or physician. Every phase of the disease receives careful consideration, and one of the conspicuous merits of the work is the attention given to details. While the essay is perfectly intelligible to the layman, it affords the physician and sanitary officer a most reliable and complete working treatise upon the causes, prophylaxis and treatment of the disease. Indeed, every physician should have this essay ever at hand as his working manual if he desires to be successful in his treatment and to accomplish the most efficient work in prevention in the community in which he resides. Every aspect of the subject is accorded careful attention, although the emphasis is always laid upon the practical side. *What to do* is ever the question asked and answered.

A short historical summary of the varying opinions regarding the disease and its contagiousness opens the book, and then, after a few paragraphs showing the appalling prevalence of the disease, the facts concerning the channels of infection, predisposing influences, various forms of non-pulmonary tuberculosis, dangers from dried sputum and bacilli - containing saliva thrown out by coughing are vividly set forth, explicit directions are given for the safe and efficient destruction of the sputum, the use of cuspidors in all public places is urged and many illustrations of various forms of these utensils are given. Careful directions for disinfection are found, the common form by formaldehyde gas being advocated.

Considerable space is devoted to prevention, and under this head rules for the avoidance of the danger of infection through milk are given, although recent investigations have shown that this source of danger is not as great as was formerly supposed.

The chapter entitled "How May One Successfully Overcome a Hereditary Disposition to Consumption?" is particularly full and instructive. Excellent advice is given regarding the hygiene of dress, bathing, respiratory exercises with illustrations, the choice of occupation, the care of children of tuberculous

mothers, their raising and education, and (a point of much importance) methods of moistening the excessive dryness of artificially heated houses in winter. Every physician can, from his own experience, testify to the truth of the statement that "the excessively dry atmosphere in winter of many city and country houses often gives rise to nasal catarrh," and, one may add, to other respiratory affections.

Sanitary dwellings, the hygiene in factory and workshops, nutrition, alcoholism, unhealthy occupations, personal hygiene, all receive practical attention and explicit and simple advice is given upon each and every subject.

A short chapter is devoted to the main signs and symptoms of early tuberculosis, although the physical signs are quite properly omitted in a popular treatise on this subject.

The remainder of the essay is devoted to the consideration of the treatment and care of the disease. Statistics are given from various authorities and sanatoria showing the percentage of cures and of those who have remained cured, conclusively proving that consumption can be "lastingly cured."

The detail of the open-air treatment, both at home and in sanatoria, is very completely discussed and plain rules are given for carrying it out in simple and inexpensive ways. The statement of the author that success cannot be hoped for "unless the patient is obedient and willing to carry out every detail of the treatment," cannot too often be repeated. The disciplinary and educational value of sanatorium life also receives its due emphasis.

Statistics from the villages of Goerbersdorf and Falkenstein where five of the largest German sanatoria have been located for many years are given, showing that not only are well conducted sanatoria not a danger to the neighborhood, but since the establishment of sanatoria in these villages the death rate from tuberculosis in them has markedly decreased, undoubtedly due to the diffusion throughout these communities of the better knowledge of hygiene learned from the sanatoria.

Illustrations of methods of pursuing the out-door life, particularly at one's home, are given, and in the supplement the author illustrates and describes at length his "window tent" which can, at an inconsiderable expense, be applied to any bed chamber, and thus render possible practically out-door sleeping.

An important chapter is devoted to the solution of the tuberculosis problem in general and in the United States in particular. In order to efficiently accomplish this, the author, besides recommending the careful investigation of each case of tuberculosis, suggests five different institutions, as follows:

I. A centrally located reception hospital and dispensary.

II. One or several city sanatoria located in the outskirts.

III. One or several mountain sanatoria.

IV. Sea-side sanatoria for children afflicted with tuberculous diseases of the joints and other tuberculous (scrofulous) manifestations.

V. A maternity sanatorium.

This comprehensive plan may still seem ideal, but what, for example, has already been accomplished or provided for in the city of Boston and the State of Massachusetts indicates that this ideal plan is rapidly becoming a reality. Boston is soon to have its municipal dispensary and consumptive hospital for advanced cases. Massachusetts has its large sanatorium at Rutland and is soon to have three consumptive hospitals for advanced cases. It also has its sanitary inspectors throughout the State, an important part of whose duties it is to investigate all cases of tuberculosis in their respective districts.

All who have had much to do with tuberculosis, both in prevention and treatment, and are conversant with what has already been accomplished throughout the civilized world, can heartily concur in the author's concluding remarks: "That tuberculosis, especially in its pulmonary form, is not only a preventable disease, but one which in the majority of cases (if taken at an early stage) can be completely and lastingly

cured." "It is certainly within the power of man, living in a civilized country * * * * to combat tuberculosis as a disease of the masses most successfully." "All that is required to attain this goal is the combined action of a wise government, well trained physicians, and an intelligent people."

The author has further increased the indebtedness which we all owe him for this admirable essay by stipulating with its publisher that it should be sold for the price of 25 cents, so that it could be brought within the reach of the greatest possible number. EDWARD O. OTIS.

Foods and Their Adulterations—Origin, Manufacture and Composition of Food Products; Description of Common Adulterations, Food Standards and National Food Laws and Regulations.

By HARVEY W. WILEY, M. D. PH. D

P. Blakison's Son & Co. Phila., $4

To the chemist who expects to find within the covers a fund of new or improved methods or other valuable analytical data drawn from the store of the author's experience, this book will be a disappointment. It is, on the other hand, "descriptive in character, and aims to give within its scope as thoroughly and intelligibly as possible, an account of the various food products in common use in their natural and manufactured conditions with the usual adulterations which have been found therein."

The author has the faculty which few scientific writers possess of interesting the lay reader, while at the same time producing a book of value to the man of science. The dissemination of knowledge of this kind among the general public cannot but react for good, since it is only when public opinion

is aroused to the amount of adulteration and the injury to health and purse caused thereby that dishonest manufacturers will learn that it is more profitable in the long run to supply honest goods.

The intelligent cook as well as the physician and sanitarian will find much of value in this work. Food-faddists whose diet is varied to feed the brain or nerves according to the latest recommendations of the street car advertiser, may find much food for thought if they will take the pains to read this book.

Beginning with an introduction which takes up the social functions of food, the author proceeds to discuss proper and balanced rations and the classification of foods and also enters into a brief explanation of chemical terms used. The main portion of the book includes methods of preparation and manufacture, food values, simple tests for adulterations, effects of storage, etc., etc., while in the appendix may be found extracts from the national food laws, regulations for inspection, standards of purity, etc.

The typography, plates and cuts are good and the general make-up of the book excellent.

B. R. RICKARDS.